INSIDE
IMPROVE YOUR PHOTO SKILLS WITH OUR EXPERT ADVICE!

THE ESSENTIAL GUIDE TO LANDSCAPE PHOTOGRAPHY

EVERYTHING YOU NEED TO SHOOT STUNNING IMAGES WITH YOUR DIGITAL SLR

2ND EDITION

UPDATED CONTENT!
ADVICE AND TECHNIQUE FROM THE UK'S LEADING EXPERTS

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MARK BAUER

Welcome...

"Heading out to the great outdoors to capture stunning images is a passion shared by millions of photographers from novices through to enthusiasts and professionals. Heading to a location, where we wait prepared for that fleeting moment where all the elements come together to bless us with an incredible scene, is what draws so many of us to landscape photography. Of course when that moment arrives, you need to know what to do to ensure you capture the scene to its maximum potential. *The Essential Guide to Landscape Photography* provides all the information, advice and inspiration that you need to take great landscape images. This guide is packed with expert guidance from some of the UK's most successful and popular outdoor photographers. Our emphasis is on in-camera techniques, in other words, how to develop your creative eye and master your digital SLR, but we also cover the key Photoshop techniques and tools you need to add that final touch of class to your images. We hope this guide helps you improve how you compose a scene so you can shoot landscape images like a pro. All the best!"

DANIEL LEZANO, EDITOR

Meet our landscape experts

All our experts are regular contributors to *Digital SLR Photography* magazine. For expert advice and inspiration to help you improve your photo skills, pick up the latest issue, available on the second Tuesday of every month. For further information, visit: www.digitalslrphoto.com

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THE ESSENTIAL GUIDE TO LANDSCAPE PHOTOGRAPHY

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ROSS HODDINOTT

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THE BASICS

REVISED & UPDATED TECHNIQUE & ADVICE FROM THE EXPERTS!

CAPTURE STUNNING LANDSCAPES – we all want to be able to do it. Fantastic landscapes inspire more photographers than any other type of image and on the face of it, well, it should be easy to do. Find an awesome vista and point your digital SLR at it, press the shutter and that should do the trick. This simple approach will probably bag you a decent snap, but often the image you capture will not do justice to the glorious scene in front of you. We've all been a little bit disappointed by a photo that doesn't quite live up to our great expectations. The difference between a decent snap and a stunning image is often down to a few versatile ideas, some easily-learned expert knowledge, the right equipment choice and careful planning. This inspirational guide will provide you with an excellent grasp of these fundamentals and help you transform your shots from the ordinary into something very special indeed.

ADAM BURTON

MARK BAUER

The Basics #1

COMPOSITION

MORE THAN ANY OTHER factor, composition can turn an OK image into a masterpiece. There are a small number of techniques that, once learned, will serve you well in many different situations.

Composing the elements in the frame is the real 'art' of taking great pictures. Carefully consider how points of interest are arranged and how they relate to each other.

Placing a subject centrally in the frame usually results in a static rather than dynamic composition. Placing the subject off-centre, encourages the eye to move around the frame more. One way of dividing the frame up to achieve harmony is to use the 'rule-of-thirds' (see below). This proportion often occurs in nature, and there is research to suggest that our brains are 'hard-wired' to find these arrangements more attractive.

1) The 'rule-of-thirds'

This is a simple way of organising the elements in the frame so that they make a balanced composition. As a compositional tool, it's been around for a few centuries and is a simplified version of the 'golden section' which is used in art and architecture.

Imagine two vertical lines dividing the viewfinder into thirds. Now do the same with two horizontal lines. You then organise the main elements of the picture within this grid. For example, with a simple landscape, place the horizon on one of the lines, so that you have two-thirds land and one third sky, or vice-versa.

If you have a strong focal point, such as a tree or building, you can place it on one of the points where the horizontal and vertical lines intersect. This will make a much more dynamic composition than if you were to place the focal point centrally, which can make a picture look rather static. Inexperienced photographers often put the subject right in the middle and it rarely works.

Moving an element of a scene to a different intersection can create a startlingly different image, such is the power of the rule-of-thirds. Don't be afraid to experiment with different variations on a theme.

RULE-OF-THIRDS GRID: This image follows the rule-of-thirds quite closely. There is approximately two-thirds land/sea and one-third sky. The lighthouse and obelisk are divided by the left vertical, each equi-distant from it.

2) Foreground interest

You see, the problem is, the world is three-dimensional and a photograph is two-dimensional. One of the main reasons that landscape images fail is that they don't convey the sense of depth that our eyes see. Fortunately, there are a few compositional tricks that we can employ to get round this rather frustrating little problem.

A very effective way to create depth in a photograph is to include a strong foreground, often in conjunction with a wide-angle lens. Emphasising the foreground in this way will add depth to the picture by creating an 'entry-point' for the eye, pulling the viewer into the scene and giving the picture a sense of distance and scale.

Wide-angle lenses help this technique because they stretch perspective, exaggerating the elements close to the lens and opening up the view beyond the foreground.

But be careful, this can result in the middle distance looking empty and lacking in interest so the trick is to shoot from a lower viewpoint. This compresses the middle distance, so that there isn't too much empty space in the composition. You'll also need to use a small aperture and focus carefully to maximise depth-of-field, keeping foreground and distant objects in focus (we'll explain how to do this later).

BOTH: MARK BAUER

GETTING IT RIGHT: The cow parsley and gorse both make an attractive foreground to lead the eye into the scene and provide suitable frames for the view beyond. A wide-angle lens and a small aperture of f/22 provides plenty of depth-of-field.

HELEN DIXON

BIG FOREGROUND OR SMALL DETAIL: It's not always necessary to have a 'big' foreground; colour, texture and patterns can all provide attractive foreground interest. The delicate carpet of flowers is as effective as the strong shapes of rocks, opposite.

HELEN DIXON

3) Lead-in lines

Lines represent depth in a picture and can be used to lead your eye into the picture and guide it around the scene.

Lines are everywhere: man-made, such as roads, paths and hedgerows, or natural, such as rivers or the coastline – all will add dynamism to your photographs. Lines don't have to be real, they can be 'implied' like the patterns created by waves over a longish exposure, or objects pointing into the frame. Lots of things can bring linear energy into your work.

Straight, converging lines are very dynamic and can give a lot of impact to a picture, but there is always the danger that the eye follows the lines into and then very quickly out of the frame again. Pictures with only converging lines might have immediate impact, but can still be unsatisfying. It's a good idea to try and place some object of interest within the frame – a figure or a tree, for example – to give the eye something to settle on within the scene.

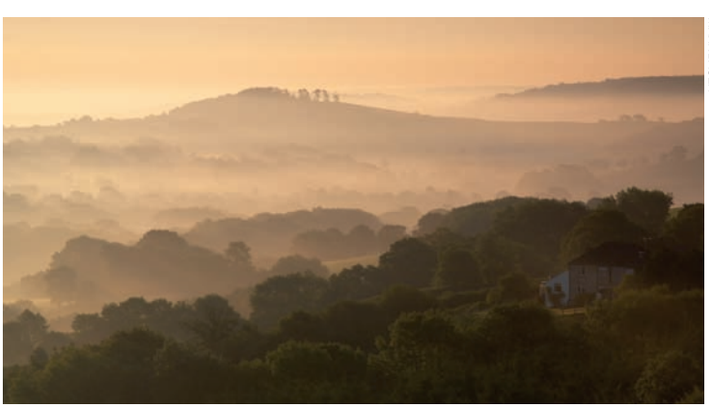
Lines that curve gently in an 'S' shape lack the immediate impact of straight, converging lines, but can result in a more satisfying image. They can lead the eye gently through the whole picture, allowing the viewer to take in other elements within the composition.

4) Layers and planes

Another in-camera technique that can be used to add depth to an image is to create a 'layered' effect. Layers in an image can be created by having a series of overlapping shapes (see right) or by strong side-lighting, creating alternative bands of light and shade that can give the effect of a 'layering of light'.

This kind of technique works particularly well with longer lenses that have the effect of compressing perspective and 'stacking' overlapping forms. Each layer, or plane, appears thinner and closer to the next, exaggerating the effect. Just remember longer lenses will produce less depth-of-field so you'll need to use smaller apertures, such as f/16, if elements are in the foreground or near middle distance.

This shot was taken at dawn near Lyme Regis using a 70-200mm zoom at around 100mm. The longer focal length compresses the distances between the layers and the strong, directional light helps emphasise the layers – the early morning mists add bags of atmosphere.



MARK BAUER

HELEN DIXON

PRO TIPS

KEEP IT SIMPLE!

Composition is all about what you choose to include in the frame – and also what you choose to leave out. Often, less is more and compositions that are uncluttered can be the most successful

5) Break the rules!

Like all rules, the rule-of-thirds needs to be applied with judgement rather than as a matter of course and there will always be situations where it can be ignored. For example, when shooting a scene where the sky is reflected in water, you might want to place the horizon across the middle of the frame, giving the two elements of the shot – sky and reflection – equal weighting.

If there is no interest in the sky, place the horizon higher in the frame or crop it out altogether. To increase a sense of emptiness and isolation, the horizon can be placed very low in the frame. The beauty of shooting digitally is the ease at which you can review your efforts and experiment to ensure the perfect composition.

RICHARD JOHNSON

IAN WOOLCOCK

6) Find natural frames

A popular compositional 'trick' is to use something to frame the view beyond, such as an archway, doorway, window or the overhanging branches of trees.

Try using frost-covered plants and gateposts to create a 'natural' frame for the main subject of your shot. Use the 'frame' to lead the viewer's eye into the shot for some truly eye-catching results.

Control the amount of sharp focus carefully. Very out-of-focus framing leaves help keep attention on the main subject, slightly soft leaves might look like a mistake.

Use this idea with care as it can often be detrimental to the scene and can suggest to the viewer that the view beyond the natural frame is even more spectacular.

BOTH: MARK BAUER

7) Experiment with viewpoints

Finding the right viewpoint is key to successful landscape composition. Rather than shooting everything from head height, experiment with high and low viewpoints.

Higher viewpoints have the effect of opening up the planes in the image and is useful with standard and telephoto lenses. When photographing well-known landmarks, it's tempting to use the established viewpoints, but spend time looking for a fresh view, as it's much more satisfying to capture something original.

While there's nothing wrong with the first picture, it's the 'standard' view of Old Harry Rocks in Dorset. Without having to move very far, however, a less photographed and more dramatic viewpoint has been found.

EXPERT TUTORIAL

How to compose a scene

WITH ROSS HODDINOTT Beautiful scenery and good light are still no guarantee that a photographer will take a great landscape image. While they might both be essential ingredients to great scenic shots, you, the photographer, still need to have the vision and ability to create a strong image. When shooting landscapes, you'll have ample time to consider, arrange and fine-tune how you frame the scene.

Composition is the art of arranging the elements of a scene in such a way that they are visually pleasing. It is an ability that becomes instinctive the more you take photographs, so don't worry if this is a skill that doesn't come to you naturally – just keep practising and you will improve over time. By using two relatively simple guidelines, based around the rule-of-thirds and lead-in lines, you will see an immediate improvement in your landscapes.

The rule-of-thirds requires that you imagine the frame is split into nine equal parts by two horizontal and two vertical lines. It's a technique I use for the majority of my scenics. A horizon that cuts centrally through an image normally weakens a shot, but a landscape composed of one-third sky and two-thirds foreground, or two-thirds sky and one-third foreground, looks far more dynamic.

Another useful 'rule' is to use some sort of lead-in line within your composition. A lead-in line uses the natural perspective of receding or converging lines to create foreground interest. The technique works well in tandem with the rule-of-thirds, so try combining the two wherever possible.

Powerful compositions often have strong lines passing through them, as they help to lead the viewer's eye through the scene to the point in the distance where the line diminishes – the 'vanishing point'. All types of subject can be used: a road, path, bridge, walkway, river, ploughed field, crop lines or fence. By using such an object in the foreground, leading into the picture, you can transform an otherwise ordinary looking view. Often a lead in-line that stretches diagonally works best, but don't overlook positioning your lead-in lines centrally, as this can also create striking results.

I spent an evening on Dartmoor photographing the moors. Though the evening light was warm, the view looked quite ordinary, but I knew that a nearby dry stone wall would create more interest. A vertical format worked best, with the wall leading from the bottom of the frame to the distant view. I tried taking a few shots looking directly down its length, then changed my position so that the wall led from one corner into the distance. I composed the shot with one-third sky, two-thirds foreground, and, with my camera set to aperture-priority mode, I selected a small aperture of f/22 to ensure back-to-front sharpness thanks to lots of depth-of-field.

RIGHT: Some DSLRs allow you to display grid lines in the viewfinder to assist composition. This can normally be selected by accessing one of the camera's custom setting menus.

ABOVE: I used a Nikon D700 with a Nikkor 24-85mm zoom, set to f/22, on a Gitzo tripod. I fired the shutter with a remote release. I also used a Lee Filter system using a polarising filter and 0.6ND graduate filters together.

DON'T PANIC!

Positioning the horizon

Though it may seem natural to place the horizon in the centre of the image, more often than not, it will produce disappointing results. In this instance, composing the shot to be only one-third sky, as opposed to half, gives greater emphasis to the foreground and creates a better balance overall. However, there isn't a set rule to follow and you should base your composition on the merits of each scene. For instance, if the sky had been more interesting, such as on a stormy day, I may well have considered giving it more emphasis in the frame.

ABOVE: Without a lead-in line, or any foreground interest, this scene lacks impact and depth. I moved closer to the wall to use it as a lead-in-line and took this shot looking down its length. This leads your eye into the picture and towards the horizon, but there is still too much empty, wasted space either side of the wall.

FINAL IMAGE

By altering my shooting position by a few steps, I was able to compose the scene so that the wall cut diagonally across the frame. This lead-in line creates an entry point and leads the viewer's eye on a journey through the image.

Summary

How to compose the scene

1) **STICK TO THE RULES!** Placing the horizon along the centre of the frame will normally create a poor composition. Instead, try to follow the rule-of-thirds

2) **USE LINES** A lead-in line will draw the viewer's eye through the image and create interest. Almost anything can be used

3) **DIAGONALLY DOES IT!** Placing your lead-in lines so that they run diagonally often works better than if they're positioned centrally

EXPERT TUTORIAL

Using foreground interest

WITH ADAM BURTON Because I'm hooked on wide-angle photography, big foregrounds are a constant feature in my landscape images. When selected carefully and photographed well, a good foreground will bring a landscape shot to life and maximise its impact. Photographs with detailed foregrounds can give the viewer a sense of 'being there', instantly drawing their attention and gaze into the image. I should point out that I don't go out primarily searching for foregrounds. The most important thing is always the main subject in your image, but for me, the foreground comes in a close second. So whenever I head out to take landscapes, I look for a location that has a lot of potential shooting opportunities. On arrival, I'll scout around the area, looking for the most appealing subject and the best angle to shoot it from. Once I have chosen the area in which I want to shoot, I begin to search around for foreground interest.

There are no rules as to what qualifies as good foreground interest but, as always, there are a few points to consider. Only you can be the judge of what you want to focus on and, obviously, this is also determined by which objects are close at hand. But it is important to pay careful attention to which objects you include, rather than just shooting the first thing you stumble across. As I favour landscapes, I almost always look for natural elements to make a foreground – rocks, flowers and water being the usual suspects. These, I know, will fit into the bigger picture that I am composing, whereas a man-made object could look unbalanced.

Once you've decided what to include as foreground, consider how to compose your shot to give the strongest possible result. Ideally, the foreground leads the eye into the main subject, but if composed wrongly, can become a distraction. One mistake many photographers make is to always shoot at eye-level; if you are including low-level rocks and shooting from a standing position, your resulting image will lack impact. Try moving lower and closer to your desired foreground, and your image will spring to life! Having said that, be careful not to move too low and close or you risk unbalancing your image by making the foreground more dominant than your background. For this same reason, try and keep your subject matter clean and simple – a fantastic background will be lost behind a cluttered or messy foreground! Finally, it's important to use a small aperture and focus a third of the way into the scene to provide a good depth-of-field. By following these simple measures, you can greatly improve the composition of your landscape images.

TOP: While your natural instinct may be to extend your tripod and shoot from a standing position, it's worth trying low viewpoints too.

ABOVE & RIGHT: Using a tripod really helps with landscape photography. I adjusted the height until I was happy with the composition and used a polariser to improve the colours. By reviewing my shots on the LCD monitor, I was able to check the exposure and depth-of-field to ensure I got the best possible result.

NO FOREGROUND INTEREST Without a foreground, the image lacks impact and can look dull and uninteresting. While water can make an attractive subject, its muddy colour in this shot lacks appeal.

WITH FOREGROUND By including a foreground, the image immediately looks more balanced and eye-catching. However, don't just settle on the first thing you find. This plant is quite unattractive.

LOW VIEWPOINT Composing from a low viewpoint helps to pick out details in this mossy rock. It is simple, uncluttered and provides a satisfactory foreground; but it still lacks something special...

Summary

Foreground interest

1) **DO YOUR HOMEWORK** Spend some time searching for the best foreground interest in your chosen area. Don't just shoot the first thing that you stumble across

2) **AVOID CLUTTER** Try to keep the foreground simple and clutter-free

3) **GET DOWN!** Get low down and close to the foreground to add impact

4) **ENSURE SHARPNESS** Set a small aperture and focus a third of the way in

5) **USE YOUR LCD** Review results on the LCD, revise composition and reshoot

FINAL IMAGE

Adding a few leaves to the rock adds interest and impact; and by slightly adjusting my viewpoint, the foreground interest is moved into an off-centre position, which strengthens the composition.

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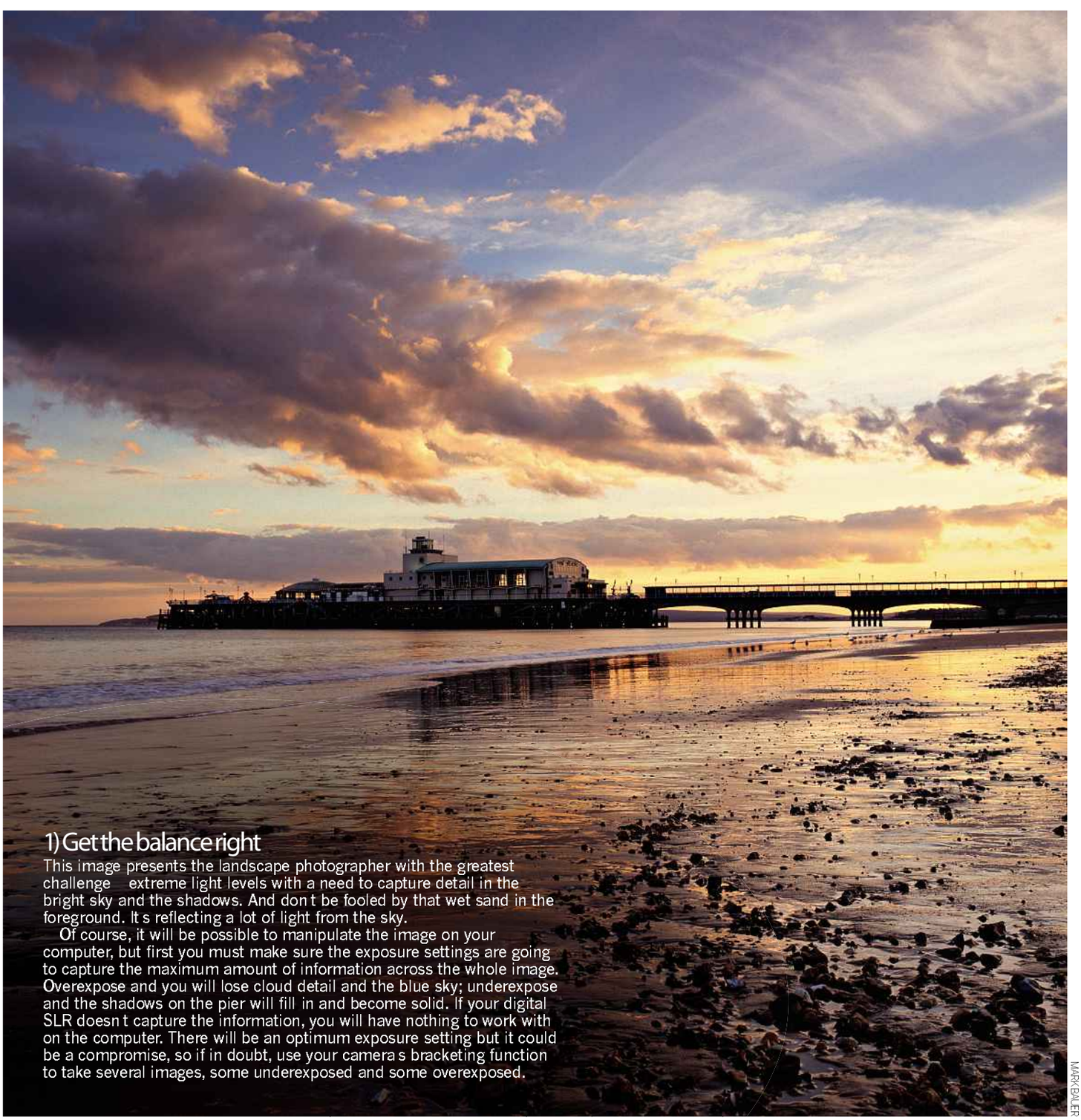
The Basics #2

PERFECT EXPOSURES

DIGITAL SLRs HAVE EXTREMELY ACCURATE, multi-zone metering systems, with a histogram function to help us check accurate exposure, so getting it right has never been easier. However, for more creative control, you need to take things into your own hands.

The basic problem is that as we gaze at a beautiful landscape our eyes adjust constantly to register detail in the highlights and the shadows. Our pupils open and close according to the level of light and our optic nerve has impressive range and latitude. Our cameras, despite their impressive technical specifications, make exposures within fairly limited parameters – the aperture and shutter speed combination will be chosen for the level of light in the scene. A perfectly-exposed sky results in gloomy shadows; detail in the shadows results in a burned-out sky. We need to help our camera to expose the right part of the scene, or find the right balance. The following expert techniques will help you capture perfect exposures by knowing what types of scenes causes problems and what action you'll need to take.



1) Get the balance right

This image presents the landscape photographer with the greatest challenge – extreme light levels with a need to capture detail in the bright sky and the shadows. And don't be fooled by that wet sand in the foreground. It's reflecting a lot of light from the sky.

Of course, it will be possible to manipulate the image on your computer, but first you must make sure the exposure settings are going to capture the maximum amount of information across the whole image. Overexpose and you will lose cloud detail and the blue sky; underexpose and the shadows on the pier will fill in and become solid. If your digital SLR doesn't capture the information, you will have nothing to work with on the computer. There will be an optimum exposure setting but it could be a compromise, so if in doubt, use your camera's bracketing function to take several images, some underexposed and some overexposed.

MARK BAILER

2) Getting the right exposure

Mark Bauer was looking for a 'different' view of Corfe Castle in Dorset, so he sauntered along to the graveyard in the village. Having found a composition based around one of the crosses, the next problem was sorting out the exposure. Mark explains, step-by-step, how he tackled the challenge:

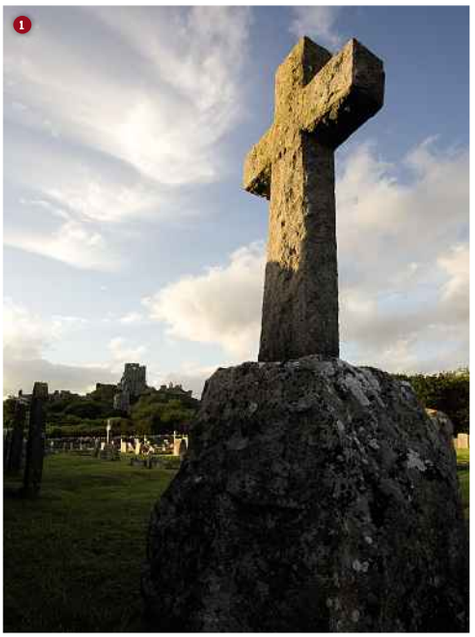
1) This is what the camera s multi zone meter came up with, without the aid of any filtration. The scene is very contrasty, and the camera has struggled to capture all the tonal information.

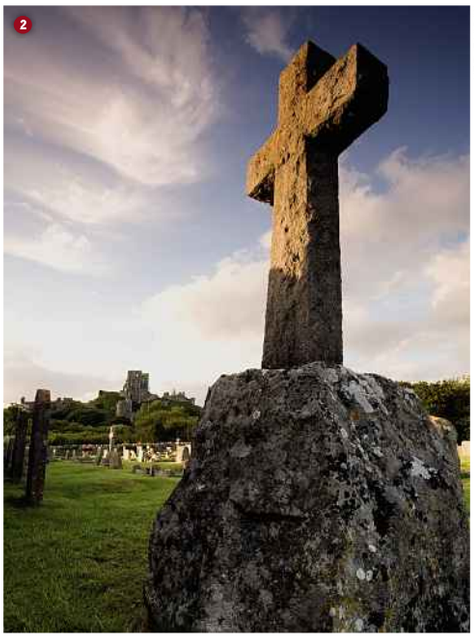
2) Spot meter readings from the base of the cross and the sky revealed a difference in brightness of about 4 stops. Setting an exposure for the land, I fitted a 0.9ND grad filter (three stops) and pulled it down below the level of the horizon, to the edge of the darkest shadow area at the bottom of the frame. I used a soft grad, so that it wouldn t cut into the cross. But there is loss of detail in the brighter parts of the sky so I reduced exposure by two thirds of a stop and reshot.

3) The result is exposed to the right (see over the page) as far as possible without clipping the highlights the histogram shows there are still dark tones, but also plenty of information in the top section, and crucially, no clipped shadows.

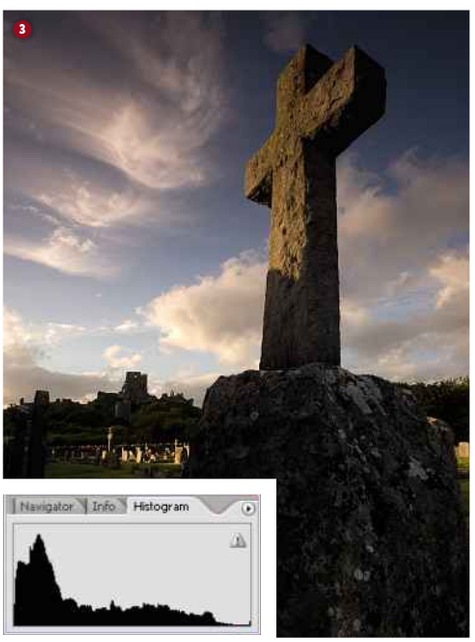
4) A straight conversion of the Raw file looks dull, the picture lacks contrast. For the final version, I ve brought the exposure down slightly and added more contrast, especially in the shadows, to recreate the drama of the original scene. I ve also tweaked the white balance to add warmth and increased saturation too.

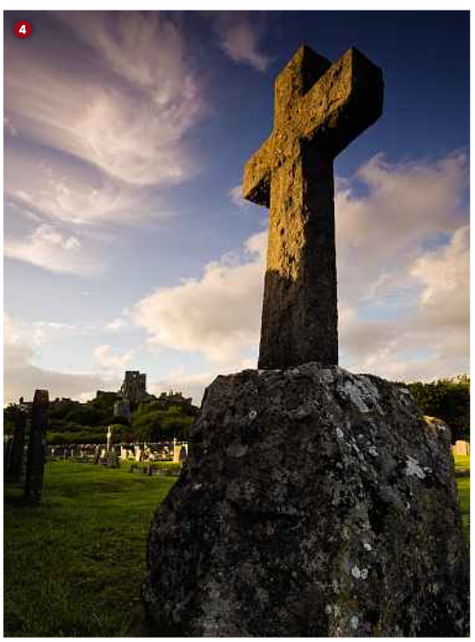
5) For comparison purposes, I also took a shot underexposed by one stop. This leaves the shadows muddy and lacking in detail, which is very apparent in the crop.





MARK BAUER





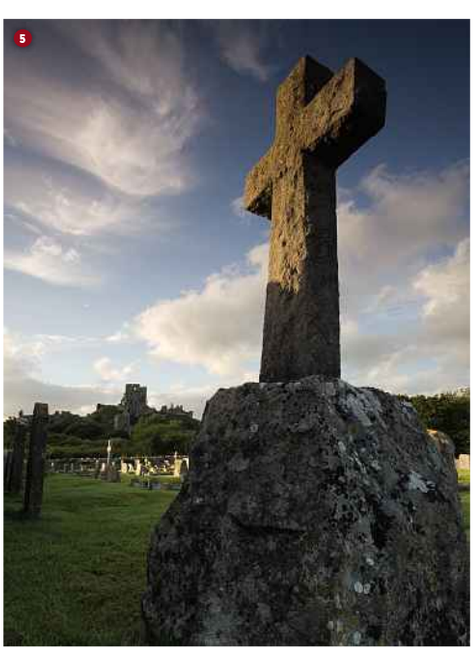
PROTIPS

MID-TONE METERING

Metering systems in digital SLRs are calibrated to an 18% grey mid-tone. Basing exposure readings on a mid-tone, such as grass, provides a good starting point for accurate exposures

EXPOSURES

Shadows
These two examples on the right show why it's not a good idea to underexpose and then try to pull up the shadows in the processing. The nearest image is around one stop underexposed (to maintain highlight detail) and the shadow curve has been pulled up to match the exposure in the correctly exposed version on the right. As you can see, not only is there 'posterisation' in the shadows, rather than smooth tonal transitions, and tons of noise, but also the sensor has recorded significantly less detail.

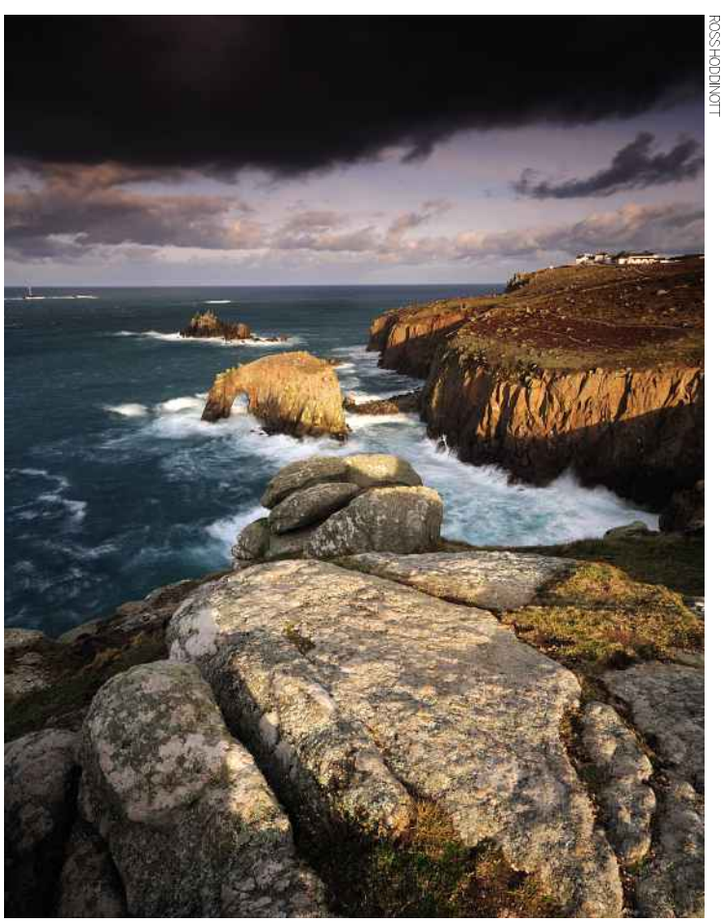


HELEN DIXON

3) Exposure for coastal landscapes

Achieving the correct exposure in coastal shots can be a bit trickier than for inland landscapes, as there are several things that can fool the camera's meter: bright highlights on water or bright white foamy waves can lead to underexposure. On the other hand, if you have chosen a large, dark rock for your foreground, this could cause the camera to overexpose. So you need to keep an eye out for any large areas of particularly bright or dark tones and apply exposure compensation accordingly. It is good practice to check the histogram after each shot and be prepared to re-shoot if necessary.

There can also be a huge range of contrast within any one scene, with bright skies, dark rocks, and bright highlights on water. Neutral Density (ND) graduate filters are essential, and depending on the conditions and the brightness of the sky and sea relative to your foreground, you may need to pull the grad down very low in the frame. This could even be below the horizon, to the top of your foreground. If you don't, you might end up with a correctly-exposed sky and foreground with a band of over-bright water in the middle of the picture. So when metering the scene to choose the strength and placement of the filter, remember to take readings from the foreground, sky and sea.



ROSS HODDINOTT

LONG EXPOSURES

Exposing to capture movement

One of the great things about taking photos by the sea is the opportunities it gives for capturing the movement of waves and adding atmosphere. In low light, with the lens stopped down to extend depth-of-field, long exposures are a necessity. They may range from several seconds to minutes, depending on lighting conditions. As waves wash around rocks or up and down the shore while the shutter is open, they will record as a romantic, mysterious mist. To capture the drama of waves breaking on the shore, speeds of ¼sec or slower works well.

ADAM BURTON

4) Histograms: An aid to checking exposure

THE BASICS In basic terms, a histogram is a two-dimensional graph, often resembling a range of mountain peaks, that represents an image's tonal extent. Whilst, at first glance, histograms might appear quite complex and confusing, they are actually very simple to read. They are an essential aid for digital SLR photographers striving to achieve consistently correct exposures in-camera and are a more accurate method of assessing exposure than looking at images you've taken on the LCD monitor. Therefore, if you are not already in the habit of regularly reviewing your images' histogram, it is time you did so. With the help of this guide, you will soon feel confident assessing histograms.

WHAT IS A HISTOGRAM? A histogram is a visual representation of an image's tonal range. The horizontal axis indicates the picture's extent from pure black (0, far left) to pure white (225, far right). The vertical axis shows how many pixels have that particular value. Looking at an image's histogram, you can tell whether the picture is made up of predominantly light, dark or mid-tones.

Although its appearance is also dictated by the colour and tone of the subject, a histogram with a large number of pixels (or a sharp peak) grouped at either edge is an indication of poor exposure. For example, a histogram with a large number of black pixels (grouped to the left) often signifies underexposure – subject detail will be obscured in the shadow areas. A large number of pixels grouped to the right of the histogram normally indicates an image which is overexposed. The image's highlights will burn out (or 'clip') and this detail is irretrievable. A graph with a narrow peak in the middle and no (or few) black or white pixels indicates an image lacking contrast.

SO WHAT SHOULD A HISTOGRAM LOOK LIKE? This is a tricky one to answer. Despite what some people may say, there is no such thing as the 'perfect histogram'. It simply tells us how a picture is exposed, allowing photographers to decide whether – and how – to adjust exposure settings. Therefore, a histogram of a light scene will be very different to one with predominantly black tones or one with a mix of both. However, generally speaking, a histogram should show a good spread of tones across the horizontal axis, with the majority of pixels positioned near to the middle, (100, mid-point). Normally, it is desirable to avoid peaks to the right-hand side of the graph, as this is usually an indication of 'burnt out' (overexposed) highlights, resulting in lost detail.

When assessing a histogram, it is important to consider the brightness of the subject itself. For example, a scene or subject boasting a large percentage of light or dark tones – like snow or a silhouette – will naturally have an affect on the overall look of the resulting graph. Therefore, whilst it is possible to make recommendations, it is impossible to generalise about what is and isn't a good histogram. Whist an even spread of pixels throughout the greyscale is often considered desirable, you will also need to use your own knowledge gained through experience.

HOW DO I CHECK A PICTURE'S HISTOGRAM? Most digital SLRs allow you to view the histogram on the LCD monitor during playback. To do this, press the playback button to view the image and then cycle through the additional photo info screens until the histogram is displayed. It's worth making this your default setting, so that you can quickly access the histogram and assess exposure immediately after taking the picture when required.

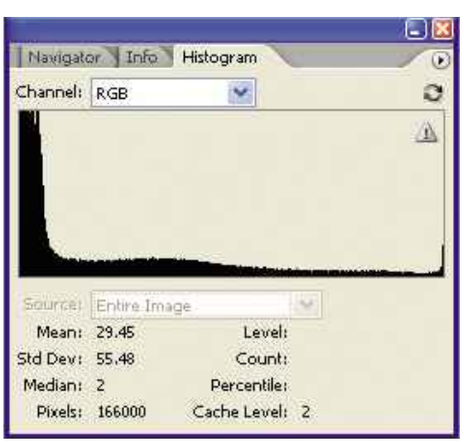
If the histogram indicates underexposure, apply positive exposure compensation. If pixels are grouped to the right hand side and the image appears overexposed, dial in negative compensation. Using the histogram is a far more reliable method of assessing exposure than looking at images on the LCD screen, particularly when trying to view images outdoors in bright light when the light reflecting from the LCD can prove deceptive.

DON'T PANIC!

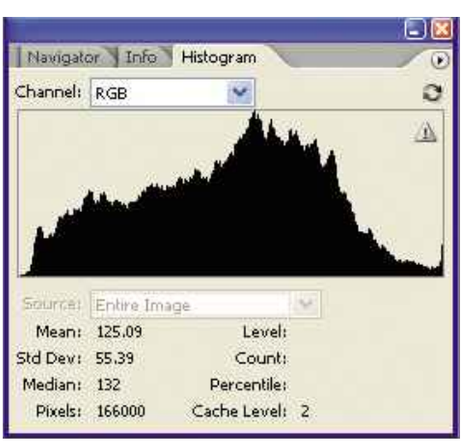
Exposure warnings

The majority of DSLRs are designed with a playback function known as the 'highlights screen'. Whilst histograms provide a graphic illustration of an image's tonal extent, helping you assess exposure overall, the highlights screen – or highlights alert – is aimed specifically at helping photographers to avoid highlights burning out. White or very light subjects in direct sunlight are especially prone to this. A histogram with a sharp peak to the far right will normally indicate that an image is suffering from areas of overexposure. However, the highlights alert actually identifies the pixels that exceed the value for pure white (255). Pixels that do so are not given a value, meaning they cannot be processed and are effectively discarded – having no detail or information recorded. When the image is replayed on the camera's LCD monitor, the pixels falling outside the camera's dynamic range flash or blink – providing a quick and graphic illustration of where picture detail is 'burned out' and devoid of detail. To rectify this, set negative exposure compensation so that the next image is recorded darker.

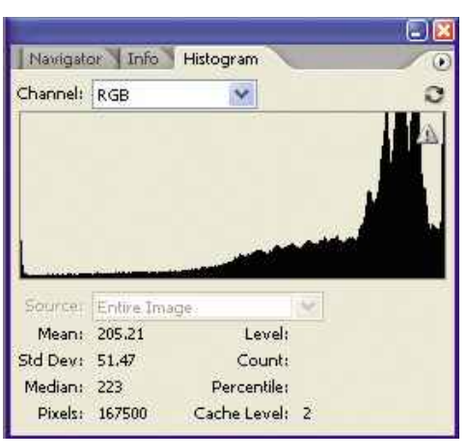
A digital camera's highlights alert is not always switched on by default. Therefore, consult your user's manual and switch it on when you feel this type of exposure warning would prove useful. Normally this is done via the camera's Playback Menu.



PEAKS TO THE LEFT The histogram is skewed to the left, as the dark backdrop means many of the pixels are in shadow areas, but the image is well exposed.



PERFECT EXPOSURE A typical landscape scene gives a so-called 'perfect histogram' as it has a good spread of tones and peaks through the mid-tones.



PEAKS TO THE RIGHT A well-exposed shot of an overly-light scene gives a histogram skewed to the right, much like that of an overexposed image.

ROSS HODDINOTT

PRO TIPS

COLOUR HISTOGRAMS

Some DSLRs allow you the option to view separate histograms for the red, green and blue channels. You're better off ignoring this option and using the standard greyscale histogram option

5) Expose to the right

Exposing to the right is fast becoming a widely accepted approach to help maximise image quality although it only applies if you shoot in Raw. With this technique you effectively push exposure settings as close to overexposure as possible without actually clipping the highlights. The result is a histogram with the majority of pixels grouped to the right of mid point hence the name expose to the right . So, when you re confident you understand exposures well enough, give this technique a try and try pushing the exposure as far to the right of the histogram as you can, without clipping the highlights. The image will probably look a little light once in the Raw converter, but this is easily corrected with the brightness and contrast controls and will give much better results than trying to lighten a darker image.

CCD and CMOS sensors count light in a linear fashion. Most digital SLRs record a 12 bit image capable of recording 4,096 tonal values over six stops. But the tonal values are not spread evenly across the six stops, each stop records half the light of the previous one. So, half of the levels are devoted to the brightest stop (2,048), half of the remainder (1,024 levels) are devoted to the next stop and so on. As a result, the last and darkest of the six stops, only boasts 64 levels. This might seem confusing but, simply, if you do not properly use the right side of the histogram, which represents the majority of tonal values, you are wasting up to half the available encoding levels. So if you deliberately underexpose to ensure detail is retained in the highlights a common practise among many digital photographers you are potentially losing a large percentage of the data that can be captured.

MAIN IMAGE & INSET: Exposure to the right of the histogram will capture maximum detail and minimum noise. Once in the Raw converter the image will look too light and washed out so use the brightness and contrast controls to adjust the image's appearance.

MARK BAUER

Aperture-priority is the mode for you!

So what is it that makes the aperture-priority mode more useful than any of the other exposure modes when shooting landscapes. Read on, and all will be revealed

APERTURE-PRIORITY GETS ITS NAME because it allows you to decide which aperture (f/number) you want to use to take a photograph, while the camera automatically sets a shutter speed, based on light levels, to achieve the correct exposure. In other words, it lets you prioritise the aperture selection, and it chooses the shutter speed accordingly.

As the lens aperture is the most influential factor over the depth-of-field (the zone of sharp focus) in a photograph, aperture-priority mode is the most practical choice of shooting mode if you are photographing a subject or situation in which control over depth-of-field is important.

Landscape photography is the best example. Generally, when shooting landscapes, you'll want to make sure your depth-of-field is broad enough to record the whole scene in sharp focus, from the immediate foreground to infinity, which means that you'll need to set a small aperture, such as f/11. Aperture-priority mode lets you do that easily, because you have to actively set the required aperture.

When shooting portraits, the opposite tends to apply – you want shallow depth-of-field, so that your subject is recorded in sharp focus but the background is thrown out of focus. That means making sure you take the picture at a wide aperture such as f/4 or f/2.8, which again is easy when shooting in aperture-priority mode because it's you and not the camera who decides which aperture to use.

That said, you can still control which aperture is set using other exposure modes, but it just requires a slightly different (and longer) way of working. In shutter-priority (S or Tv) mode, for example, all you need to do is change the shutter speed until the camera sets the aperture you want. Similarly, in program mode, you can use the program shift function to change the aperture and shutter combination that the camera has set until you get the right aperture.

Where aperture-priority triumphs over these alternative modes is that once you've set a particularly aperture, the camera won't change it, even if light levels change. Instead, the shutter speed adjusts to maintain the correct exposure. This wouldn't be the case if you set the camera to shutter-priority mode – if light levels change, your DSLR automatically adjusts the aperture to maintain correct exposure, giving the shutter speed priority, so your control over the depth-of-field is diminished. Similarly, in program mode, the camera would change the aperture/shutter speed combination in response to changing light.

Aperture-priority is also a handy mode to set for general use, when you're just wandering around, shooting anything that takes your fancy, whether it's architecture, details, abstracts or candids. Depth-of-field requirements will vary depending on the shot – one minute you need lots of it, the next, as little as possible – but this can be quickly altered with the flick of the camera's input dial, and the viewfinder display will keep you fully informed of exactly which aperture (and corresponding shutter speed) you're using.

ROSS HODDINOTT

THE EFFECT OF APERTURES With depth-of-field having such an effect on the final image, it's no surprise that many experienced photographers rate aperture-priority as their favourite mode. These two shots show how different apertures can produce very different results.

Setting aperture-priority on your DSLR

Choosing aperture priority mode is simple all you need to do is turn your exposure dial (or in some cases push the exposure mode button) and select A or Av. Your DSLR will then be set to aperture priority mode and all you need to do is rotate the small adjustment dial (found either on the handgrip or on the top right corner of the rear of your camera) to change your aperture. If you lightly depress the shutter button to activate the exposure system, you can keep a check on the shutter speed the camera has selected.

How other exposure modes work

We've already established that in aperture-priority mode, you set the desired aperture and the camera sets the accompanying shutter speed to give the correct exposure. Here's a quick rundown of how the other modes work.

Full-auto Mode

The camera sets the shutter speed and aperture to achieve correct exposure and you can't change the combination to use a specific aperture or shutter speed.

Program Mode

Program works in a similar way to full auto, but you can usually alter the aperture/shutter speed combination if you need to use a specific aperture or shutter speed.

Shutter Priority

You set a shutter speed and your DSLR sets the appropriate aperture. If light levels change, the same shutter speed is used and the aperture changed.

Metered Manual

You manually set both the aperture and shutter speed independently of each other, so neither changes unless you adjust them, even if light levels fall or rise.

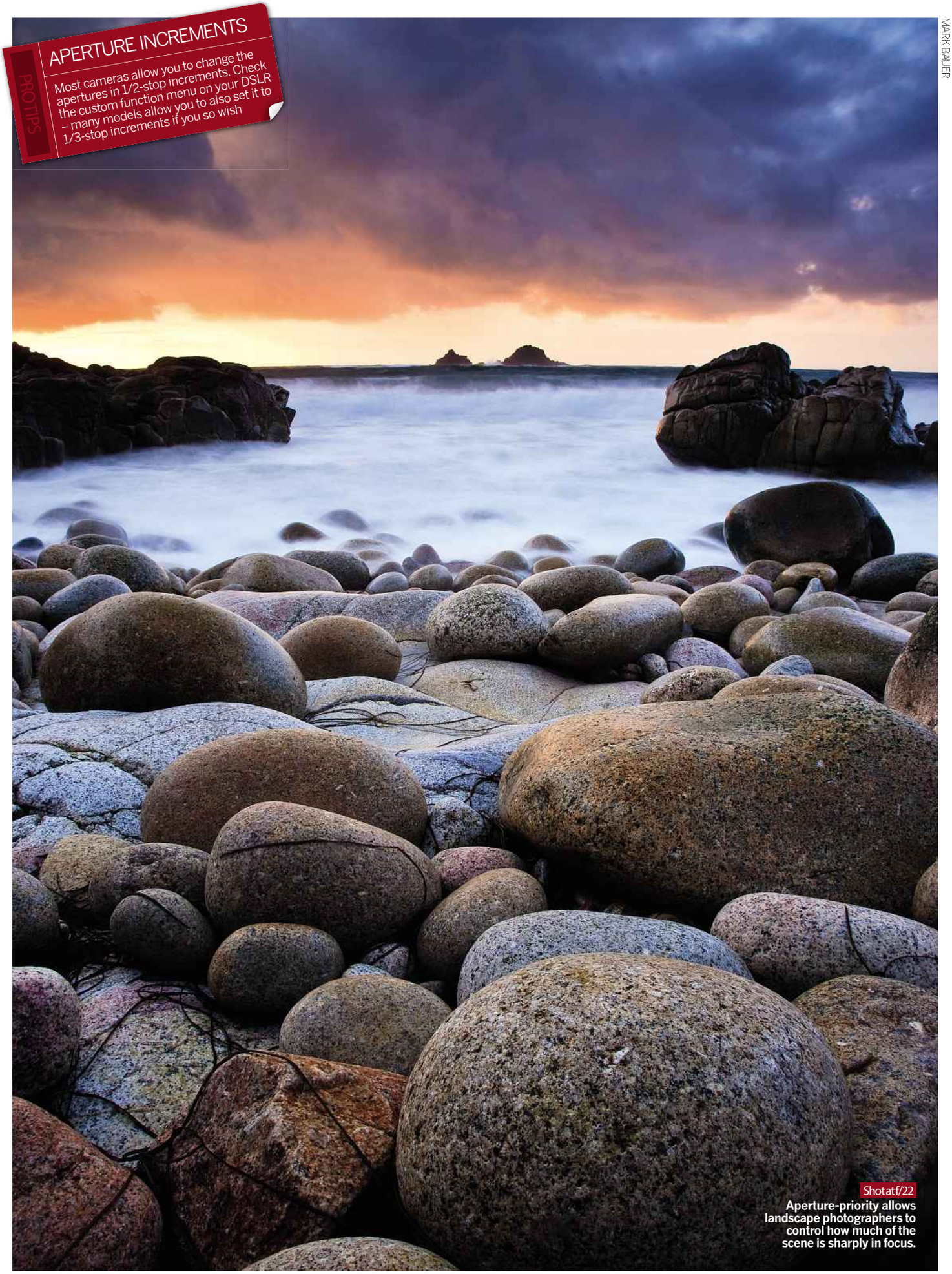
Subject Modes

These program modes are tailored to suit a specific subject, with various camera functions like the AF, flash and exposure systems set accordingly.

PRO TIPS

APERTURE INCREMENTS

Most cameras allow you to change the apertures in 1/2-stop increments. Check the custom function menu on your DSLR – many models allow you to also set it to 1/3-stop increments if you so wish



MARK BAUER

Shot at f/22
Aperture-priority allows landscape photographers to control how much of the scene is sharply in focus.

EXPERT TUTORIAL

Shutter speeds & landscapes

WITH ROSS ARMSTRONG Landscape photographers understandably give priority to apertures, but in some situations, shutter speed is just as important, as it can be used to capture the effect of movement within a scene. Because you want to maintain sharpness in landscape images by maximising depth-of-field, you can really make shutter speeds work for you as the smaller apertures you'll require also mean slower shutter speeds. This is easily done by setting your camera to shutter-priority (Tv or S) on the mode dial. This ensures you get the right exposure as you set the shutter speed for the desired length of time, while your DSLR adjusts the aperture accordingly. So why choose the shutter speed rather than the aperture? Well, setting the slower speed means anything moving when you fire the shutter, such as flowing water or foliage blowing in the wind, is captured as a soft blur, while anything static, like a fence or rock, remains sharp and in focus. The effect of setting a long exposure is to give images extra depth and dimension whilst illustrating a real sense of movement. The result is usually closer to how you remember the scene, rather than a lifeless image of grass with every blade in focus.

But remember, even digital SLRs can be fooled. Be careful not to overexpose an image when shooting, for example, a field of golden sweeping grass in the evening sun. As you lower the shutter speed, the camera's chosen aperture will eventually flash, indicating that the image will be overexposed. You can, of course, check the image and the histogram on the LCD monitor for blown-out highlights.

For even slower shutter speeds and the chance to lift your landscape photography to another level, use filters. A polariser will cut out reflections and darken blue skies to give clouds that 'wow' factor, as well as reduce the amount of light reaching your sensor by two stops at the same time. You can further enhance movement and blur by using a Neutral Density filter, which is a neutral grey filter that doesn't affect colour balance but has the effect of reducing the amount of light passing through it, allowing you to select slower shutter speeds as a result.

For optimum results shoot at dawn and dusk and always use a tripod. Shoot on darker, cloudy days, and let nature work for you – less light means you'll get slower shutter speeds. On windy days, hang your camera bag from the tripod to keep your outfit stable. A helpful hint is to use a remote release/self-timer and mirror lock-up to avoid contact with the camera during the exposure to gain the maximum effect. Wait for the wind, open the shutter and whatever happens, don't get blown away!

ABOVE, POLARISER AND ND GRAD: "I used a polariser combined with an ND grad filter to hold back the bright sky and ensure a well balanced, long exposure. Shooting in Raw, I used the self-timer and an exposure of 1.6 seconds."

SHUTTER SPEED COMPARISON: "For this series, the lens (10-22mm set to 13mm) was focused on the long Marram grass in the foreground. The only thing I changed was the shutter speeds in a sequence from 1/50sec to 1.6sec. Note how the movement of the grass in the breeze becomes increasingly blurry as the shutter speed is slowed. My favourite image from the sequence is the longest exposure, which captures the movement in the Marram grass exactly like I remember it, in the low, winter sunshine."

FINAL IMAGE

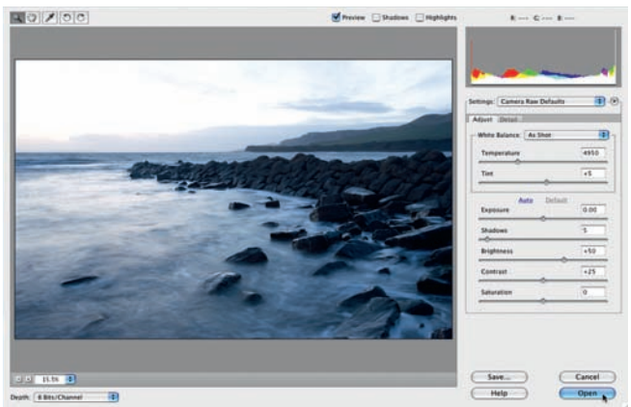
Dunstanburgh Castle, Northumberland. "The movement in the foreground really adds to the impact of the image. I used the histogram and the image on the review screen to check the exposure and any blown-out highlights."

Combining Raw files

WITH LUKE MARSH Setting your DSLR to shoot in Raw means you're able to recover hidden detail from areas of the scene that are overexposed, such as bright sky. Photoshop expert Luke Marsh shows how to use the Photoshop Elements Raw converter to create two different images at different exposure levels exposures from the same Raw file and then recombine them for the perfect result. Techniques used in this easy-to-follow step-by-step tutorial include exposure adjustment, layer creation and editing, level adjustment, sharpness control using the High Pass filter, opacity effects and colour adjustment. This technique is especially satisfying as you are only working with image data captured in the original single exposure. Elements 4.0 was used here, but more recent versions are suitable too.

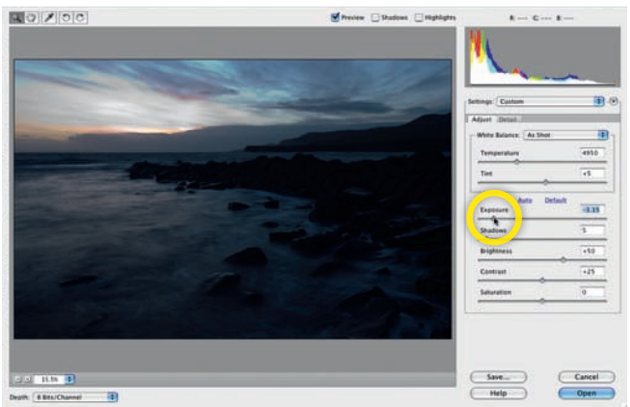
ORIGINAL IMAGE

1



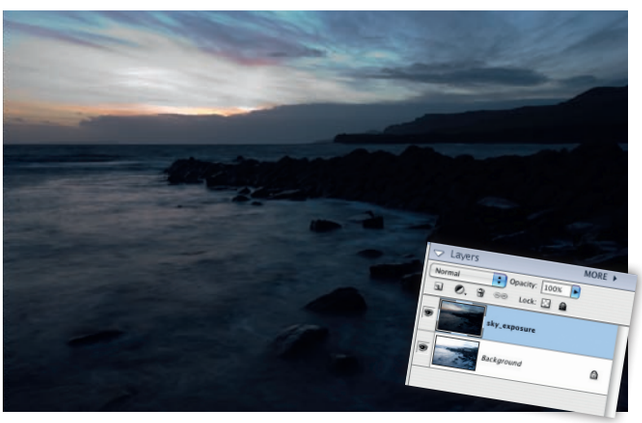
If you've never used the Elements Raw converter before, the first thing you'll notice on opening files is the image opens in the Raw control window (above). For the first step, I simply click **Open**, leaving the settings as they are, then go **File>Save As** and create a Photoshop file (.psd) as we are going to be working with layers.

2



I reopen the original Raw file, and again the Raw control window appears with the image. This time, I use the **Exposure** control (circled) and move the slider left, to underexpose the image, pulling back the detail from the sky area hidden on the original image. Happy with the results, I click **Open** to take the image into Elements.

3

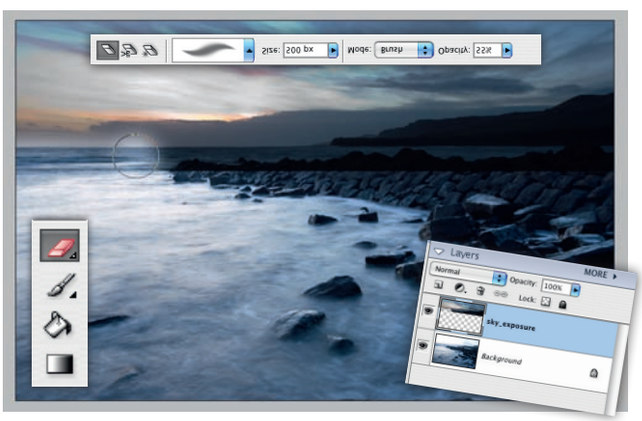


I now have two files open. One contains the original exposure and the other is the new underexposed image. With the underexposed file active, I go **Select>All** then **Edit>Copy** placing the image into the pasteboard memory. Now I can close this file and use **Edit>Paste** to place this image into a new layer on the original file.

4

With the two exposures in place I want to combine the correctly-exposed foreground with the newly-exposed sky. With the sky layer active and using the **Rectangular Marquee** I select a large area of foreground, just short of the horizon, and use **Edit>Delete** to remove the area noting the effect in the layer palette preview (inset).

5



Now it's time to tidy up the horizon, so with the **Eraser** tool set to a medium-sized, soft-edged brush at an Opacity of 55%, I gradually erase areas of the newly-exposed layer, revealing the original horizon exposure. The slight feathering effect between the two layers creates a misty effect which further enhances the image's mood.

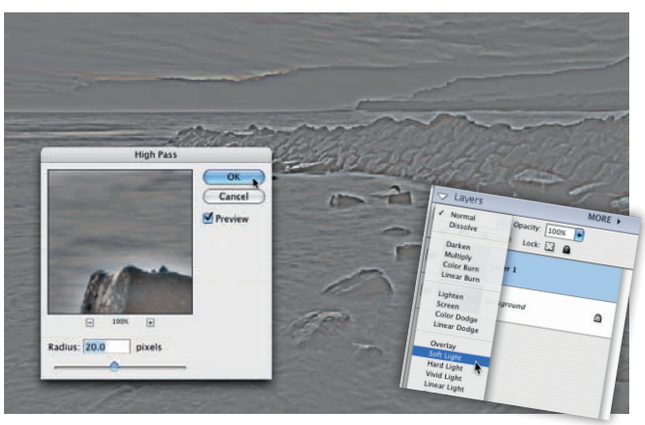
6

The initial layer work is complete, so to save my work so far, I go **Layer>Flatten Image** then **File>Save As** to create a new file. With both layers merged, it's time for some overall enhancement, so I go **Enhance>Adjust Lighting>Levels** to lighten up the image and improve the definition. I click **OK** to apply the changes.

FINAL IMAGE

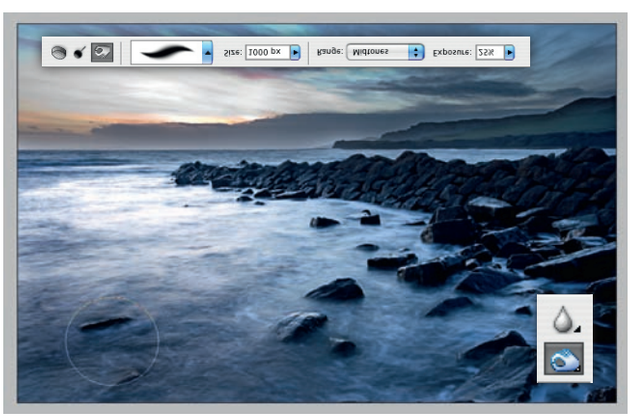
STORMY SKIES AHEAD! It's clear to see the benefits of shooting your images in Raw, as it's possible to rescue more detail than if you'd captured the scene as a JPEG.

7



The **High Pass** filter is a far more forgiving way to enhance detail than sharpening. To use it, I first go to **Layer> Duplicate Layer** to preserve the original image. Then I go to **Filter>Other>High Pass,** adjusting the **Radius** to around **20 pixels** before clicking **OK**. I change the **Blend Mode** in the layer palette to **Soft Light**.

8

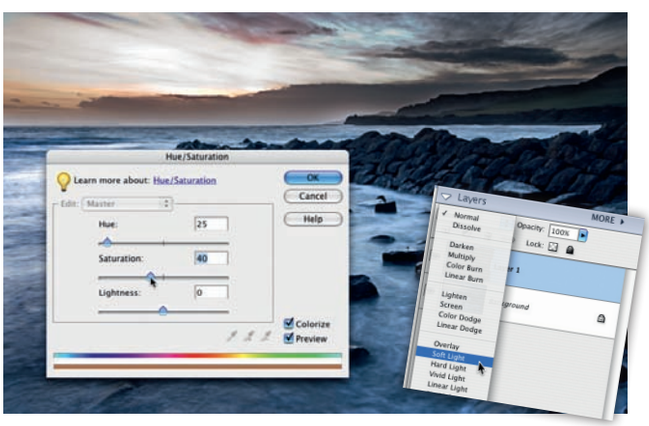


Use **Layer>Flatten Image** again, saving a copy if required. Now, using the **Burn** tool (inset right) with a large soft-edged brush and the **Opacity** at approximately 25%, I darken the exposure of specific areas, which helps to improve the depth of the image. I focus on the edges of the frame and build the effect up gradually.

9

The image is predominately blue in hue and I'd quite like to inject a different tone to the sky area. Using the **Rectangular Marquee** tool**,** I select the area above the horizon and **Select>Feather,** entering an amount of 50 pixels to soften the selection, then I go **Edit>Copy** then **Edit>Paste,** placing the selection into a new layer.

10



Change the **Blend Mode** of the new layer to **Soft Light**, and then go to **Enhance>Adjust Colour>Adjust Hue/Saturation**. In the window, I start by clicking the **Colorize** box and immediately see the effect in the preview. Finally, I adjust the **Hue** and **Saturation** sliders until I am happy with the colour, and click **OK**.

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Produce the highest level of print quality and reliability with Epson's latest ink technlogy in the form of the professional and robust 4880. Create consistent, photo realistic prints on a variety of media that last; the Ultrachrome K3 inkset produces depth in tonal range with subtle shadows and gradations. Enhance your productivity with high speeds, new drivers and simple controls.

Epson SP 7880, 9880 and 11880

Add quality and productivity to in house production printing up to 64" wide and enhance performance in proofing, photography and even fine art reporoductions with Epson's new inkset.See the difference with the advnced Epson 8 colour UltraChrome K3 ink with Vivid Magenta and enhanced image processing technology. The new Vivid Magenta means there is extended colour representation of reds and blues and the 3 black inks means you can achieve the maximum tonal range.

Epson SP7900 and 9900

The next generation of photographic printing technology. Epson's x900 series uses their successful Micro-Piezo TFP printhead technology and Epson Ultrachrome HDR inkset. With the capability of handling ten seperate ink channels with 360 nozzles per channel, and a ten colour screening algorithm, the 900 series gives you high quality prints with superior colour and clarity and a higher production rate. The new inkset, with the addition of Orange and Green, means you are able to achieve a wider colour gamut than ever before.

wacom

NEW Wacom Bamboo Touch - the best of both worlds

With Bamboo, Wacom introduces a new, inspiring technology that provides a more intuitive and simple way to work with computers. By combining multi-touch functionality and pen tablet technology in a single device, it provides the best of both worlds - and allows users to express their ideas and thoughts even more spontaneously and immediately.

SERVICES

Fine Art Printing, Retouching and Hi-Res Scanning

Our services cover hi-res film and flatbed scanning, retouching and on-demand giclee printing up to 64" roll widths We print one-offs, short runs and editions for exhibitions, galleries, professional photographers, artists and private individuals. Using the finest machines, with genuine manufacturer's pigment inks on acid-free, museum grade archival papers and canvasses, our high quality work has served the likes of Bob Carlos Clarke, Getty, Chris Levine, National Portrait Gallery and Downing Street. We offer friendly advice to help you achieve the best results possible.

Colour Management

Our on-site and remote colour management services will take the guess work and frustration out of your digital workflow. From putting together equipment solutions to creating proof quality custom ICC paper profiles, let us help you save time and money and achieve consistent output.

The Basics #3

SHARPNESS

LET'S IMAGINE YOU'VE JUST FOCUSED on an object that is five metres away. How sharp will something be at six metres? Or even five-and-a-half metres? The answer is governed by depth-of-field – the distance either side of the point of focus that is deemed to be acceptably in focus. As long as you control the aperture that you are shooting at, then you are in control of depth-of-field, and you can use it creatively. There will be occasions when you don't want much of it at all, and you'll get that effect by shooting with a large aperture like f/4. However, for most of the time that you're shooting landscapes you'll want to maximise depth-of-field to get as much of a scene in focus as possible. .

Foreground detail is important and has to be in focus, but so does the rest of the scene. This means using small apertures to get good sharpness either side of the focus point. But just consider this last phrase for a moment, and then think about where you might focus when shooting a landscape. Many novice landscape photographers are happy focusing at infinity when shooting a landscape, but don't forget that depth-of-field extends either side of the point of focus. In fact the area of depth-of-field extends one-third in front of the focused point and two-thirds behind, in other words, you get more depth-of-field behind the subject than in front of it. Obviously there is no benefit to having acceptable sharpness extending beyond infinity, but what you can do is pull the point of focus back towards you, so it's the end of the depth-of-field zone that is at infinity instead. This way you'll get more of the scene sharp. This technique is called hyperfocal focusing, and has been used by professional landscape photographers for decades. The optimum point of focus for any particular scene relies on the choice of aperture setting and the focal length of the lens you use – and changes for full-frame and cropped sensor DSLRs! There are calculators and pocket reference tables you can stash in your camera bag, or you can use a dependable rule-of-thumb that suggests you aim a third of the way into the picture with your lens set to a small aperture. We'll be covering both focusing techniques, as well as providing you with other expert advice to ensure you maximise image sharpness. This includes revealing why using the smallest aperture won't necessarily produce the sharpest results, even though it gives the most depth-of-field!

ADAM BURTON

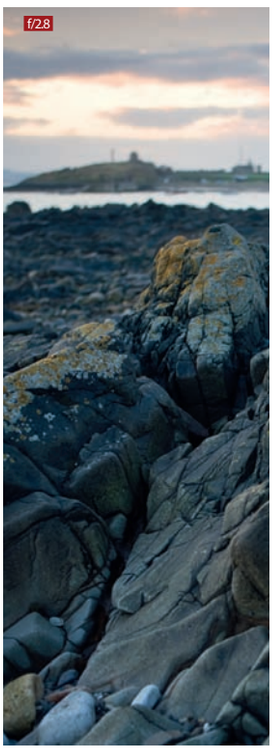
Focusing with the hyperfocal distance

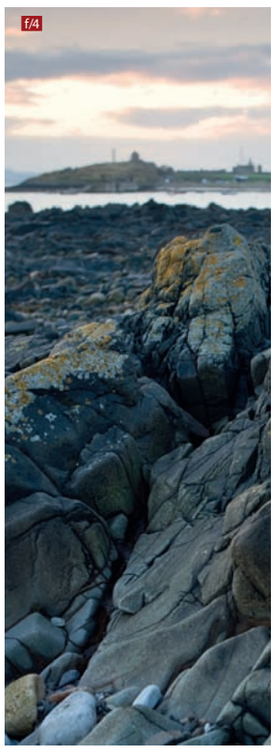
Landscape specialist Lee Frost explains how to use the hyperfocal focusing distance and aperture-priority for super-sharp scenics

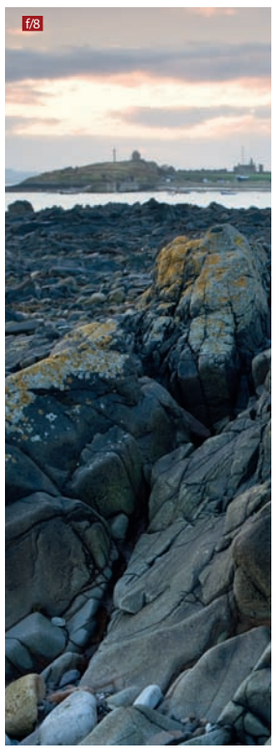
ONE OF THE FUNDAMENTALS of successful landscape photography is being able to control and assess depth-of-field to ensure that the image is sharp from front-to-back.

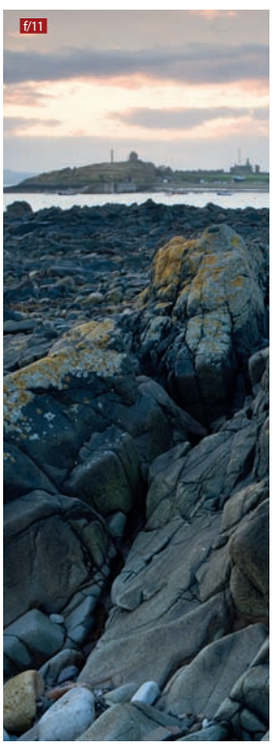
Aperture-priority mode helps you to achieve this, not only by forcing you to think about which aperture to set, but also by making sure that once it is set, that aperture won't change if light levels fluctuate or you put filters on the lens. If the exposure has to be adjusted when shooting in aperture-priority mode, the camera does it by changing the shutter speed, so the aperture remains constant. This is vitally important because achieving extensive depth-of-field is not just about aperture selection, but also focusing distance, and a careful balancing act between the two is required to ensure the best possible results. You could take every picture at f/22 with the lens set to infinity and most wide-angle shots would be sharp from front to back. Unfortunately, this simple approach won't always work – so you're not going to get the best results. Wide-angles and zooms tend to give their worst optical performance when at minimum aperture and their best around f/11, so ideally you should shoot as close to f/11 as you can to achieve optimum optical quality, and focus the lens at a distance that maximises depth-of-field at that aperture. Over the page, Helen Dixon provides a simple focusing method along these lines that yields excellent results.

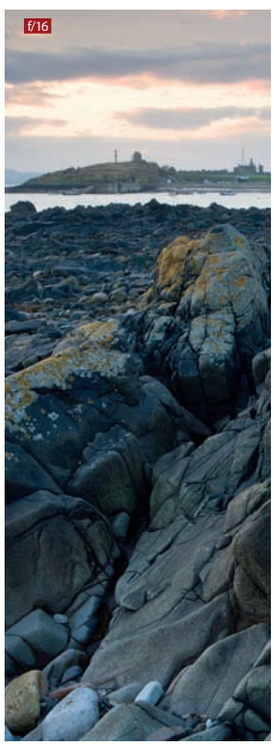
My favourite technique is based around something known as hyperfocal focusing, which involves focusing on a point known as the hyperfocal distance, where depth-of-field is maximised for the aperture in use. Lenses used to feature a hyperfocal distance scale on the barrel but virtually none do today. There is an equation for calculating hyperfocal distance for any lens and aperture, so in true *Blue Peter* fashion, I did just that and created a hyperfocal distance chart, which you can copy and refer to when you're on location. The distances in feet (ft) represent the hyperfocal distances for each focal length and aperture. If you focus your lens on that distance and set the corresponding aperture, depth-of-field will extend from half the hyperfocal distance to infinity. So, if you're using an APS-C-sized sensor, shooting at 24mm and f/11, focus on a point 9ft away and depth-of-field will extend from 4.5ft (half the hyperfocal distance) to infinity – which is more than enough depth-of-field in most situations.

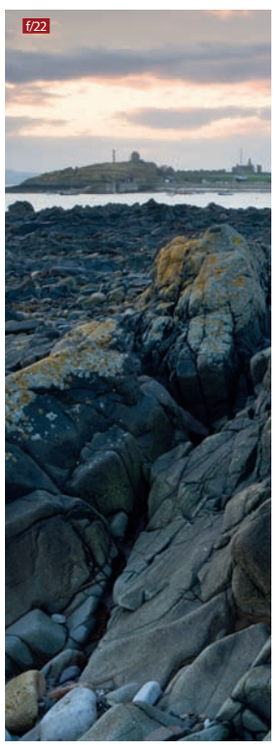












Aperture-priority and multi-zone metering

Before finally 'going digital' back in the spring of 2008, I'd spent 20 years shooting with film cameras that had no internal metering, so I used a handheld spot meter to determine correct exposure – which then had to be manually set on the camera. Thankfully, those days are long gone. Digital SLRs have fantastic integral metering systems that are capable of producing perfectly exposed images in all but the most demanding situations, so I can't see the point in making my life more complicated than it needs to be. These days my digital SLR is set to aperture-priority mode and multi-zone metering and generally stays that way. Combined with the feedback provided by the camera's preview image and the image histogram, I've got all I need to ensure I get perfect exposures in any shooting situation. The same applies to you.

Hyperfocal distance: APS-C sensors

Focal length	12mm	15mm	17mm	20mm	24mm	28mm	35mm	50mm	70mm	100mm	135mm
Aperture f/8	3.2ft	5ft	6.4ft	8.9ft	12.6ft	17ft	27ft	55ft	105ft	218ft	395ft
f/11	2.3ft	3.5ft	4.5ft	6.2ft	9ft	12ft	19ft	39ft	75ft	155ft	280ft
f/16	1.7ft	2.5ft	3.3ft	4.4ft	6.4ft	8.6ft	14.5ft	27ft	54ft	110ft	198ft
f/22	1.2ft	0.9ft	2.3ft	3.2ft	4.5ft	6ft	9.5ft	19.2ft	38ft	77ft	140ft

Hyperfocal distance: Full-frame sensors

Focal length	16mm	20mm	24mm	28mm	35mm	50mm	70mm	100mm	135mm
Aperture f/8	3.8ft	5.6ft	8.0ft	11ft	17ft	35ft	68ft	138ft	250ft
f/11	2.6ft	3.9ft	5.8ft	7.8ft	12ft	25ft	48ft	98ft	178ft
f/16	1.9ft	2.9ft	4.0ft	5.5ft	8.5ft	17.5ft	34ft	70ft	125ft
f/22	0.4ft	2.0ft	2.9ft	3.9ft	6ft	12.5ft	24ft	49ft	89ft

PROTIPS

ALWAYS USE A TRIPOD

If you want to shoot great landscapes in good light, without compromising image quality, mount your camera on a tripod so you don't have to worry about slow shutter speeds causing camera shake

FINAL IMAGE: F/11

If you're an absolute beginner, start off by shooting at f/11 if you can, to optimise image quality, and only use a smaller aperture if you need to get more depth-of-field. How easy is that!

EXPERT TUTORIAL

Focus a third of the way into the scene for sharp results!

WITH HELEN DIXON The normal practice for beginners shooting landscapes is to place their DSLR on a tripod, focus on infinity and set a very small aperture to give enough depth-of-field to keep most or all of the scene in focus. It's a tried and tested method that works well, but can be improved upon by fine-tuning focusing technique and the choice of aperture.

Looking at focusing first, when you focus on 'infinity', i.e. on the distance, the depth-of-field will extend a third of the way in front of the focusing point and two-thirds behind. So while part of the foreground is sharp, the area closest to you may well be out of focus. Also, you'll have wasted two-thirds of the available depth-of-field, which stretches beyond infinity. Instead, by focusing part of the way into the frame, you can maximise depth-of-field so that it covers the foreground and the distance.

The optimum distance at which you should focus is termed the hyperfocal distance and there are various elaborate ways of calculating it. The simplest method for focusing by far (and one that works 99% of the time) is to focus one third of the way into the scene. By doing this, and setting a small aperture, you're ensuring that the depth-of-field in front of the focusing point covers most, if not all, of the foreground, while the area behind is kept sharp by the other two-thirds of the depth-of-field. If you want to be as precise with your focusing as possible, use the table on the previous page.

With the focusing technique taken care of, we'll move onto your choice of aperture. While setting the smallest aperture (e.g. f/32) gives the most depth-of-field, it doesn't necessarily give the sharpest results. That's due to two main reasons: most lenses are optically designed to give the sharpest results at apertures of around f/8 to f/13, while at smaller apertures the effects of diffraction softens the image, thus negating any benefits provided by depth-of-field. The optimum aperture to use varies from lens to lens so the only way to discover for yourself is through trial and error, shooting at different apertures and comparing the sharpness on your LCD monitor or ideally at home on you computer, where you can magnify images for close scrutiny.

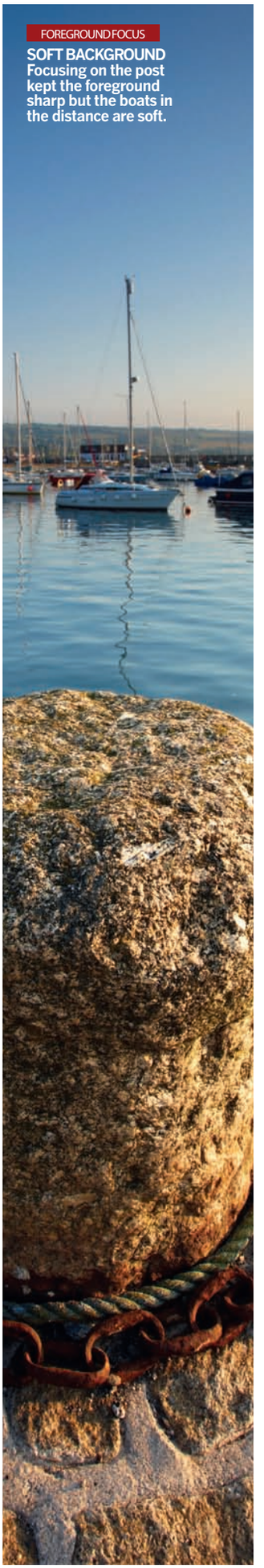
For the sharpest possible results, using the hyperfocal distance method explained by Lee Frost on the previous pages is best. Of course, you must make sure that you set your camera up on a tripod, to reduce the risk of camera shake. But this process can be time-consuming and for most people, my technique is ideal. The images shown here were shot using a fairly dominant foreground to emphasise the effect of changing the focusing distance. The aperture was f/13 for all three images.

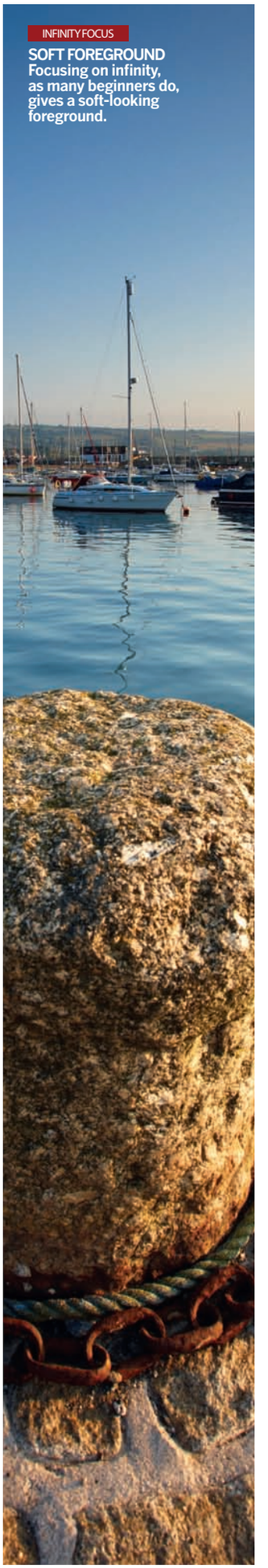
TAKING THE SHOTS: Helen sets up a tripod, essential for preventing blurred shots caused by shake, then uses Live View to check the depth-of-field of the shot on her LCD monitor while selecting the aperture. After taking the shot, she can then check the image's sharpness on the LCD screen by magnifying different parts of the frame.

DON'T PANIC!

Blurry viewfinder

When using the hyperfocal distance method, you'll notice that the viewfinder image looks unsharp when you've focused a third of the way into the frame. This is because your lens is always set to the widest aperture to provide a bright viewfinder image – depth-of-field will be minimal. Use the depth-of-field preview button or take a shot at your chosen aperture and you'll see that the image really has far more depth-of-field, because the lens has closed down for the exposure.





BEST METHOD

SHARP SCENE
Focusing a third of the way into the scene and using f/13 ensured maximum sharpness.

Summary

How to maximise image sharpness

- ✔ Set your DSLR up on a tripod to minimise shake
- ✔ Focus one-third of the way into the scene
- ✔ Choose a small aperture like f/13-f/16 to get the best possible optical quality
- ✔ Check depth-of-field using Live View
- ✔ Check image sharpness by zooming in to the image on your LCD monitor

The effects of diffraction

The more you close the aperture down, the greater the depth-of-field, so the usual advice given for sharp results is to use very small apertures, such as f/16 and f/22. However, stopping down too far can actually be detrimental to image sharpness and this is due to an optical effect called 'diffraction'.

The simple explanation of diffraction is that when light passes through the aperture of a lens, the edges of the hole disperse the light waves. As the aperture is stopped down, the amount of diffracted light becomes a larger percentage of the total amount of light being recorded and the image becomes noticeably less sharp, meaning less detail is resolved on the image.

APS-C and full-frame sensors are affected slightly differently, and certain lenses will be more prone to diffraction than others. But in general, with an APS-C-sized sensor, you'll start to notice the effects of diffraction if you stop down beyond f/11 and with a full-frame camera, once you go beyond f/16.

Of course, you can use apertures smaller than that and decide between overall sharpness and depth-of-field relevant to the amount of fine detail you think it's necessary to record in any one particular image. That said, it's worth remembering that a 17mm lens on an APS-C-sized sensor will give you a depth-of-field from 2¼ feet to infinity when set to the hyperfocal distance at f/11 – enough for most situations.

To illustrate the effects of diffraction at different apertures, we've shown a series of pictures at f/8, f/11, f/16 and f/22 – focusing and overall exposure remained constant – the only change was the lens aperture. The pictures were all processed using the same software and settings when post-processing. More sharpening than usual has been used to make the effects more obvious.

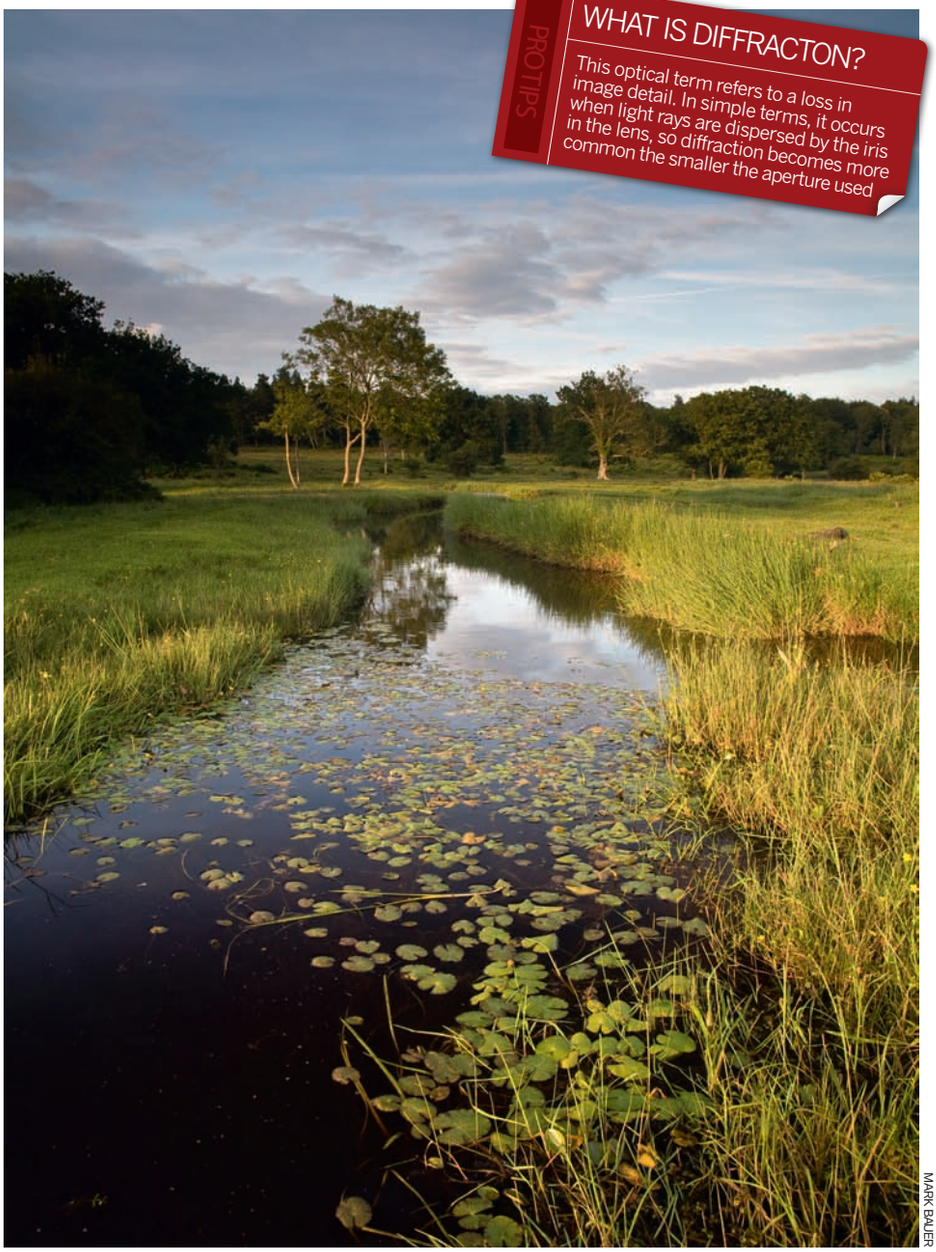
EFFECTS OF DIFFRACTION: This image shows the full frame. The box shows the cropped section used to illustrate the effect of diffraction. It was taken with a Canon EOS 20D and 17-40mm lens.

COMPARISON RESULTS: The results may not be so obvious in magazine reproduction, but are very clear in large prints. At f/8, everything looks pretty sharp, with good detail in the background foliage. Things still look good at f/11, but once stopped down further than this, instead of becoming sharper as depth-of-field increases, the image becomes noticeably less sharp and detailed. This is crucial in landscape photography, especially when making large prints, and it is this 'mushy' looking foliage that spoils digital landscapes for many photographers.

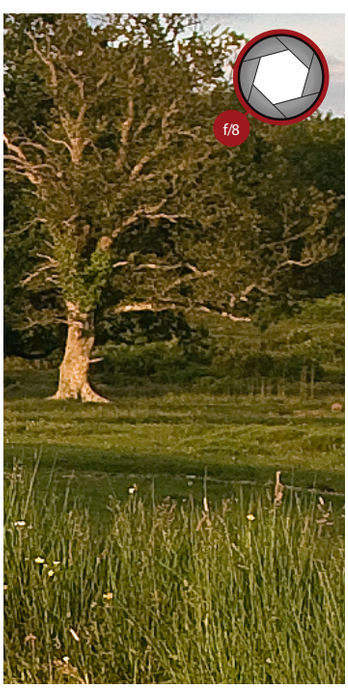
PRO TIPS

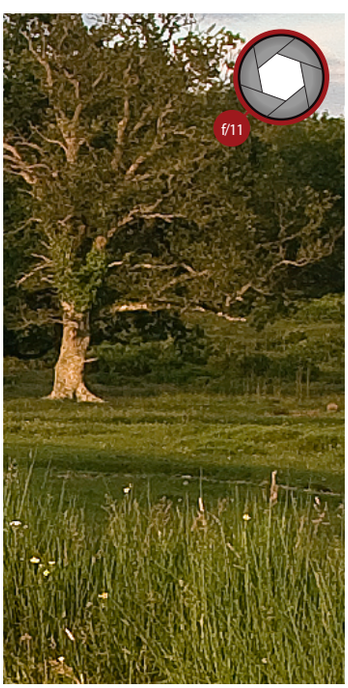
WHAT IS DIFFRACTON?

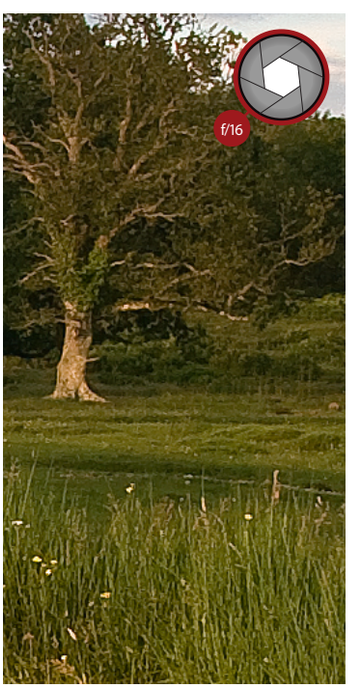
This optical term refers to a loss in image detail. In simple terms, it occurs when light rays are dispersed by the iris in the lens, so diffraction becomes more common the smaller the aperture used

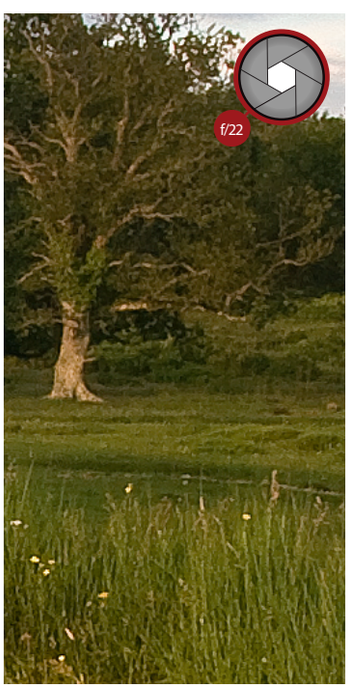


MARK BAUER









GARY McPARLAND

Digital sharpening

Even after shooting, the quest for sharpness, or, more accurately, its control, can continue. All digital images benefit from sharpening and it's best done in post-processing for more control. If you are using Photoshop's Unsharp Mask (USM) filter, a smallish pixel radius of 0.6 will usually give the best results. Increase sliders gradually, monitoring the effect in the preview window as you do so.

Shake-free landscapes

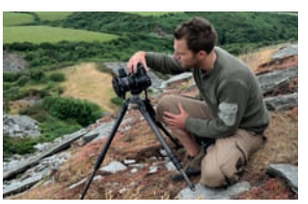
Landscape photographer Ross Hoddinott shows how using a tripod and mirror lock-up is well worth the effort

THERE'S ALWAYS A RISK OF CAMERA SHAKE spoiling landscape shots. Setting a small aperture for lots of depth-of-field, along with a low ISO rating for the best possible image quality, means that shutter speeds are always likely to be slow, even in bright conditions. This is why a tripod is seen as essential for this type of photography, but even then, there is always the risk of shake. Let's see how using a remote release or a self-timer can help you to reduce the risk of blur, and how seeking out your camera's mirror lock-up facility can lead to sharper results too.

Essential kit for shake-free results

A sturdy tripod is an essential accessory and the right one will last you for years. But just how do you pick the right one? It's all about compromise: you want something solid, but not so heavy that you always leave it at home. Turn to page 114 for a selection of tripods at various price points that are all ideal for landscape photography. You should also look at investing in a remote release, an inexpensive accessory that offers an alternative to using the self-timer for contact-free firing of the shutter.

Handheld At 1/15sec at f/22, it's not surprising that handholding the camera resulted in a lot of shake that has blurred the image. I need a small aperture though, to maintain front-to-back sharpness. I could raise the ISO rating to compensate, but I prefer to use a tripod instead to preserve picture quality.



Tripod Putting the camera on a tripod has made a huge difference to image sharpness, but zooming on fine detail reveals that there is still some blur present. This is probably because I'm wobbling the camera very slightly as I press the shutter release. I need a way of tripping the shutter without touching it.

Tripod & self-timer An easy way to avoid moving your camera while it's on a tripod is to fire it with the built-in self-timer. This way you can touch the camera, but any movement will have subsided by the time the shutter fires. Many DSLRs give you the option of setting the self-timer delays at two or ten seconds.

Tripod & remote Better still is a remote release. This will also lets you trip the shutter without wobbling the camera but, because there is no delay involved, you can be more precise with your timing. This can be very useful if you have rapidly changing lighting conditions, as I did when shooting this location.

PROTIPS

IMAGE STABILISATION

Many cameras (and lenses) now feature a shake reduction system of one type or another, and this can be a real bonus if hand-holding. However, this should be switched off when using a tripod

Mirror lock-up Even with a self-timer or remote release, some shake can still cause blur, thanks to the camera's mirror swinging violently as the shutter opens. In my final picture, I've used my D700's mirror lock-up function to move the mirror out of the way before firing the shutter with the remote. It's the sharpest result by far.